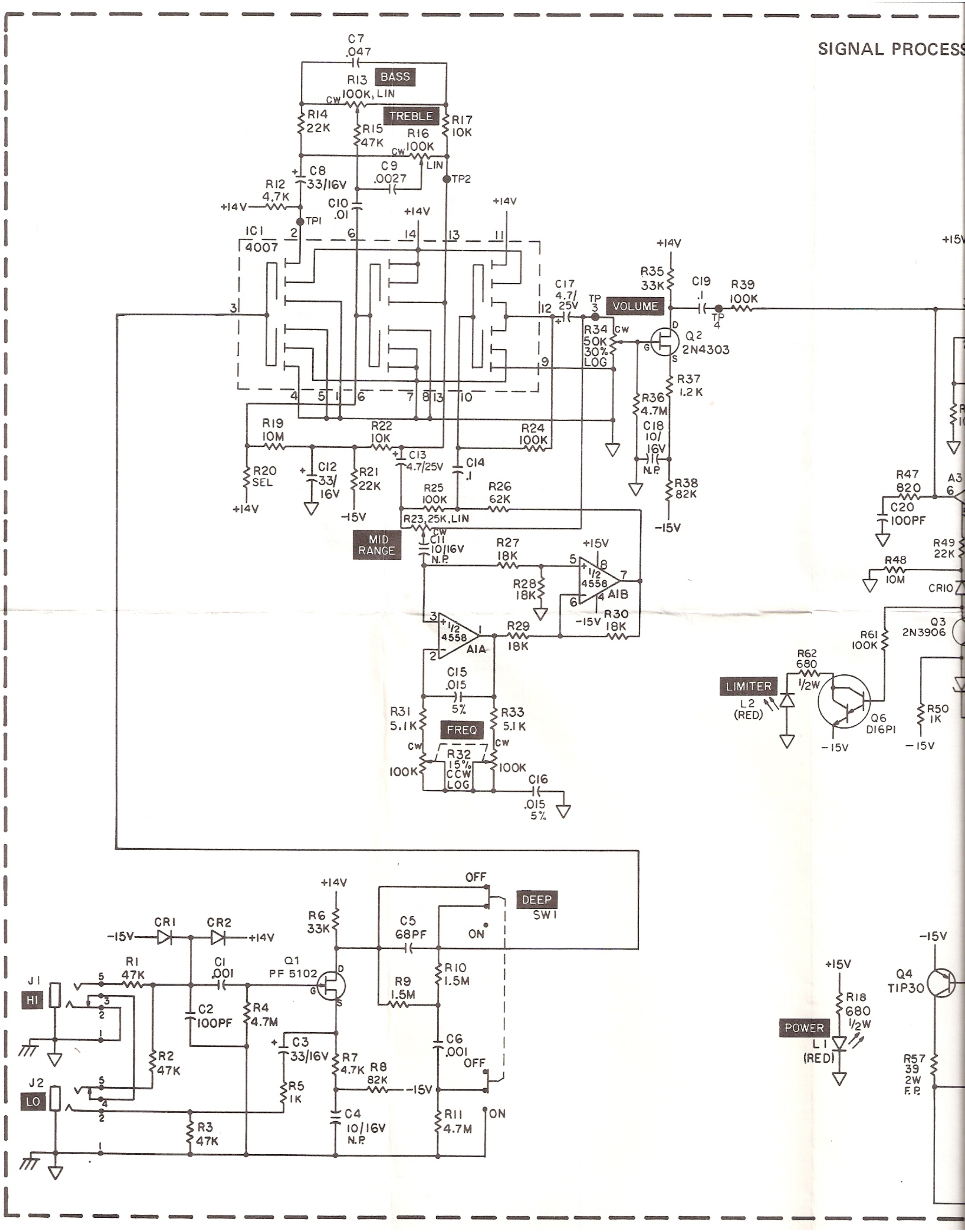
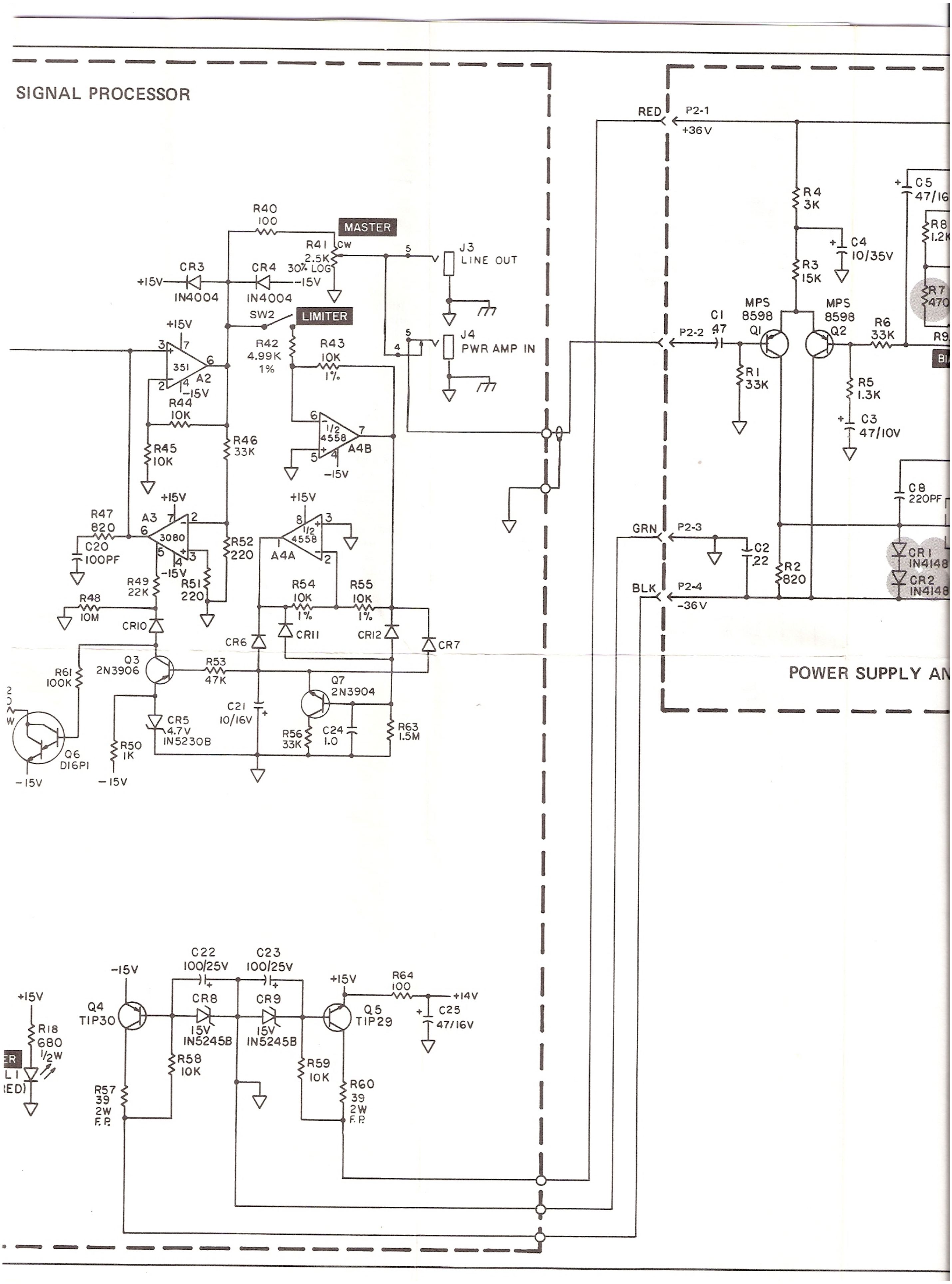
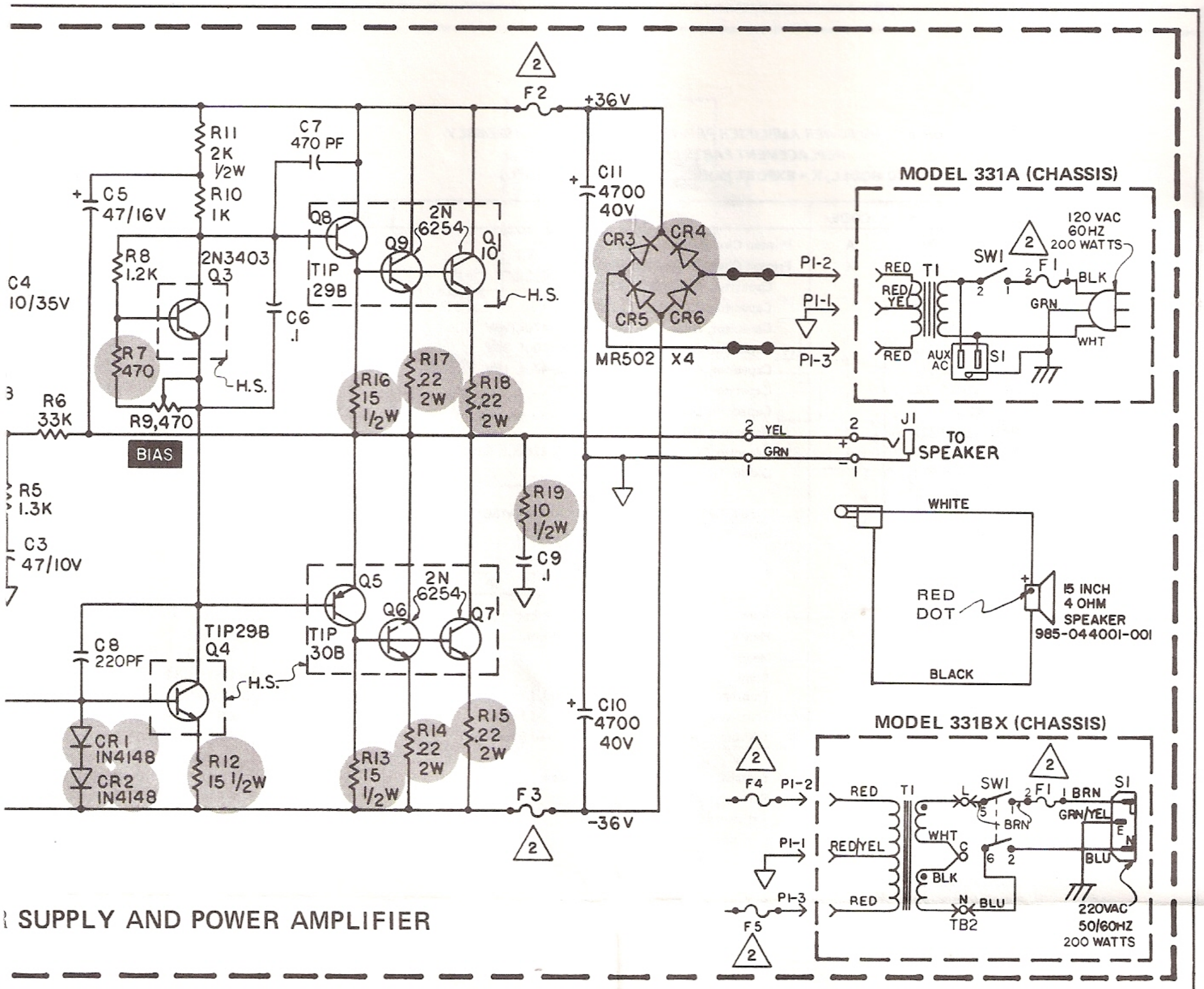
SIGNAL PROCESS




SIGNAL PROCESSOR
R40 100
MASTER
R41 2.5K 30% LOG CW
CR3 IN4004
CR4 IN4004
+15V
-15V
SW2
LIMITER
J3 LINE OUT
J4 PWR AMP IN
R42 4.99K 1%
R43 10K 1%
351 A2
R44 10K
R45 10K
R46 33K
1/2 4558 A4B
R47 820
C20 100PF
A3 3080
R52 220
R49 22K
R51 220
R48 10M
1/2 4558 A4A
R54 10K 1%
R55 10K 1%
CR10
CR6
CR11
CR12
CR7
R61 100K
Q3 2N3906
R53 47K
Q7 2N3904
CR5 4.7V IN5230B
C21 10/16V
R56 33K
C24 1.0
R63 1.5M
R50 1K
Q6 D16P1
C22 100/25V
C23 100/25V
CR8 15V IN5245B
CR9 15V IN5245B
Q4 TIP30
Q5 TIP29
R64 100
+14V
C25 47/16V
R18 680 1/2W
R58 10K
R59 10K
R57 39 2W F.P.
R60 39 2W F.P.
RED
P2-1
+36V
GRN
P2-3
BLK
P2-4
-36V
P2-2
C1 47
R1 33K
R4 3K
R3 15K
C4 10/35V
MPS 8598 Q1
MPS 8598 Q2
R6 33K
R5 1.3K
C3 47/10V
C2 22
R2 820
C5 47/16
R8 1.2K
R7 470
R9
C8 220PF
CR1 IN4148
CR2 IN4148
POWER SUPPLY AN



NOTES:

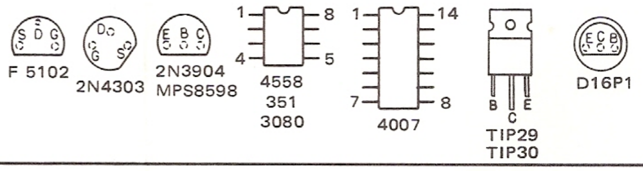
1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTORS ARE OHMS ± 5%, 1/4W.
   ALL CAPACITORS ARE IN MFD (uf).

2.

MODEL	USED ON	F1	F2 & F3	F4 & F5
331BX	L6 EXPORT	T1.6 AMP TIME LAG	T3.15AMP	T3.15AMP
331A	L6 DOMESTIC	3 AMP SLO BLO	4 AMP	JUMPER

3. ● PARTS ELEVATED FROM PRINTED CIRCUIT BOARD.

COMPONENTS BASING DIAGRAMS
TOP VIEW



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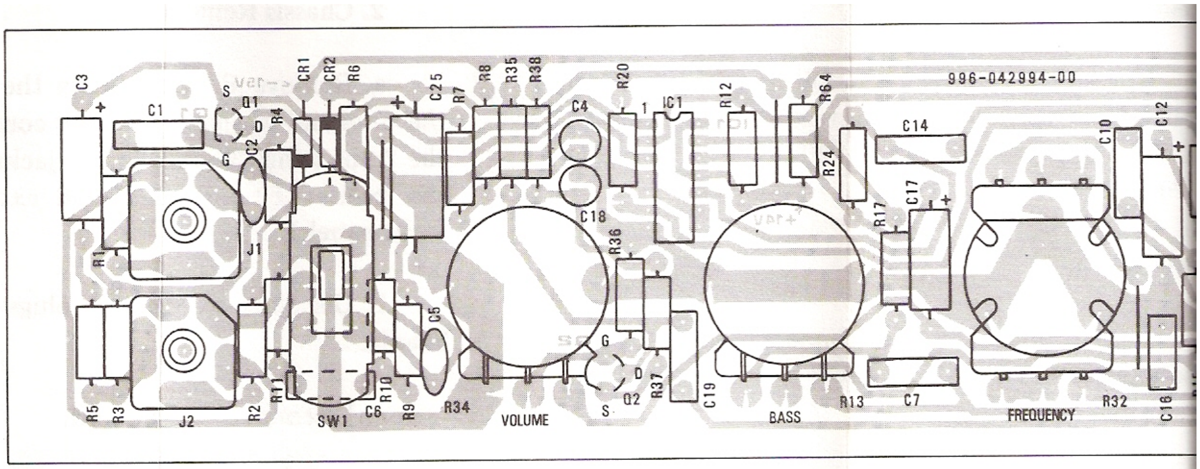
WAALHAVEN ● ZUIDZIJDE 48, 3088 H.J., ROTTERDAM ● NETHERLANDS

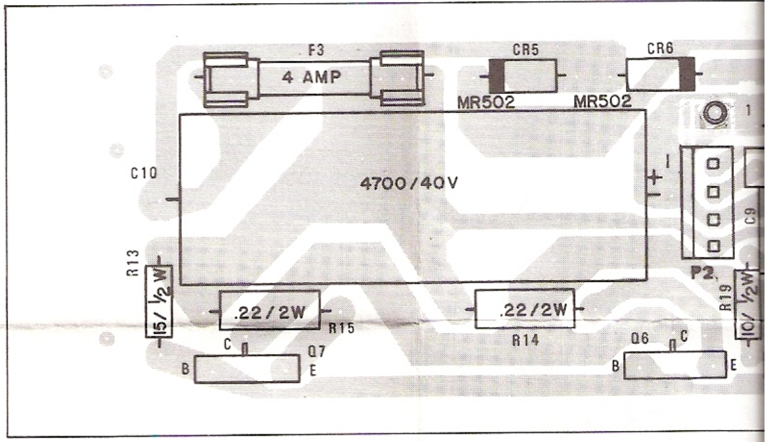
L6 AMPLIFIER COMPOSITE SCHEMATIC

MODEL 331A, BX

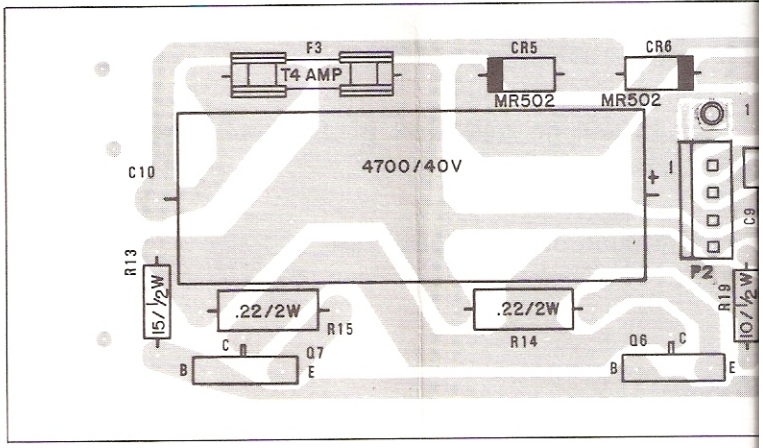
993-044115-001



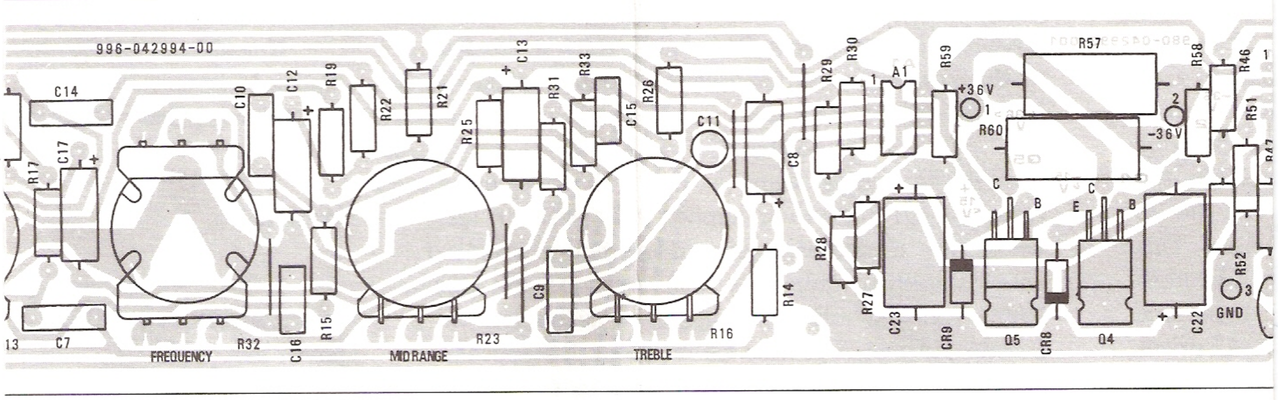
S



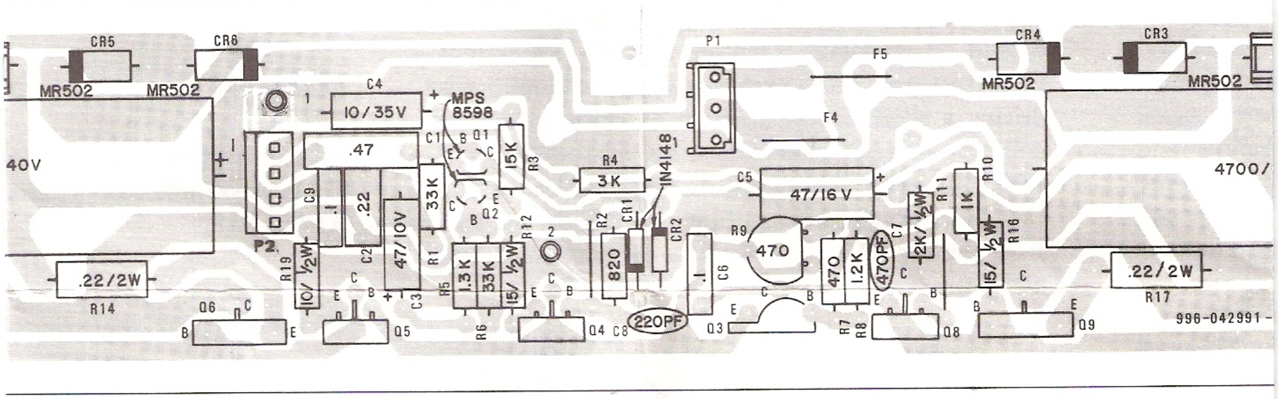
POWER SU



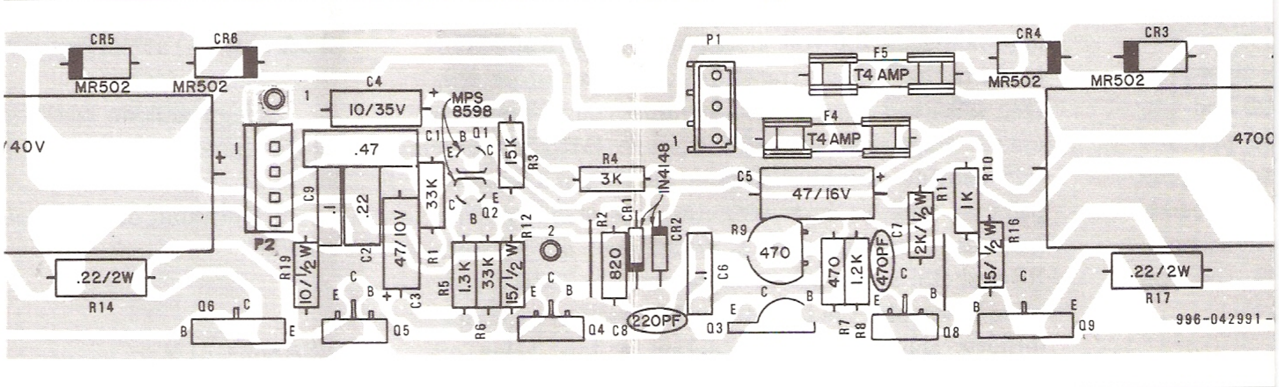
POWER SU



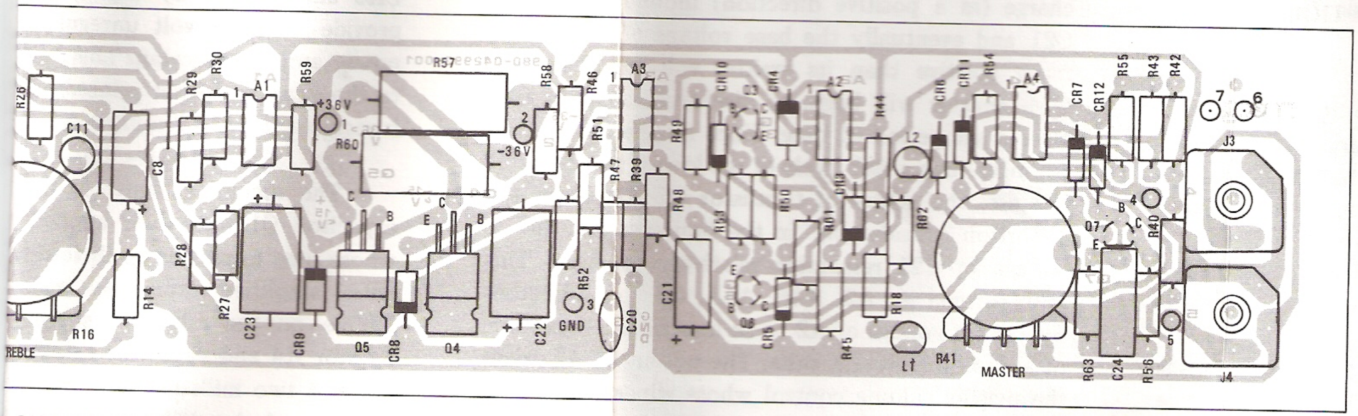
SIGNAL PROCESSOR PRINTED CIRCUIT BOARD ASSEMBLY



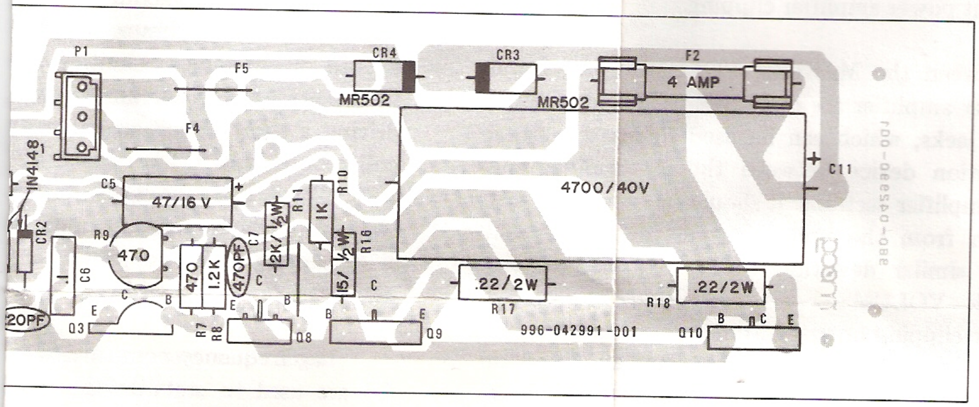
POWER SUPPLY AND POWER AMPLIFIER PRINTED CIRCUIT BOARD ASSEMBLY
DOMESTIC MODEL 331A



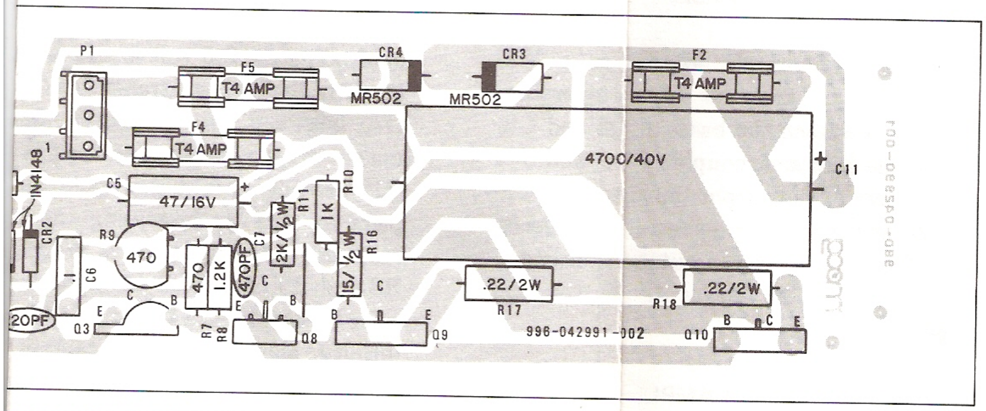
POWER SUPPLY AND POWER AMPLIFIER PRINTED CIRCUIT BOARD ASSEMBLY
EXPORT MODEL 331BX



CIRCUIT BOARD ASSEMBLY



R PRINTED CIRCUIT BOARD ASSEMBLY
ODEL 331A



R PRINTED CIRCUIT BOARD ASSEMBLY
DEL 331BX

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2500 WALDEN AVE. ● BUFFA
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L6 PRINTED CIRCUIT BOARD ASSEMBLIES

MODELS 331A, BX

L6 AMPLIFIER CIRCUIT DESCRIPTION
SIGNAL PROCESSOR

Transistor Q2 is a common source voltage gain stage similar to Q1, and in addition to providing voltage gain, it has a predictable distortion characteristic similar to "tube sound". Gain stage Q2 then drives the input to the limiter stage consisting of A2, A3, A4A, A4B, Q3 and Q7 and their associated components.

The basic control element of the limiter stage is operational transconductance amplifier A3. By virtue of varying its transconductance, A3's output impedance is varied at pin 6. Lowering this output impedance shunts off a portion of the signal current flowing through resistor R39 and thus attenuates the signal. Bi FET amplifier A2 serves as a high input impedance buffer to avoid loading resistor R39 when driving subsequent stages. The actual threshold of limiting is determined when the voltage on capacitor C21 precedes negative enough to cause transistor Q3 to conduct. Diode CR5 biases Q3's emitter at -4.7 volts, therefore, when the voltage on capacitor C21 reaches approximately -5.4 volts, Q3 is forward biased and its collector current will flow through diode CR10 and resistor R49 into the bias node of the 3080, pin 5. It is the current going into the bias node that determines the output transconductance of A3 and therefore the resulting attenuation of the input signal. When transistor Q3 does conduct, in addition to changing the bias on A3, transistor Q6 is also caused to conduct, therefore, the limiter LED L2 illuminates.

In order to charge capacitor C21 negatively, the buffered limiter signal is amplified two times in A4B and rectified through diode CR7. The signal is inverted in A4A and rectified by diode CR6 thus performing full wave rectification. In other LAB Series limiter circuits, also called compressors, the decay time constant for the limiter section is set by a resistor placed directly across capacitor C21. However, in the L6, transistor Q7 is added to lower the low frequency distortion by acting as a latch which makes the apparent time constant much longer than the actual one. This action takes place because capacitor C24 is being charged at the same voltage as C21 (through diodes CR11 and CR12 rather than CR6 and CR7). This implies that in the initial stages of compression, when the limiter is first turned on, the base of Q7 and the emitter voltage will be the the same. Resistor R63 causes capacitor C24 to discharge (in a positive direction) more rapidly than C21 and eventually the base voltage of Q7 will be more positive than its emitter voltage. Therefore, Q7's emitter will begin to discharge capacitor C21 after a set period of time. Since this period of time is longer than a half cycle of the lowest frequency of interest, the action of transistor Q7 will lower the distortion considerably in the limiter circuit due to voltage of C21 remaining relatively constant. This loop formed by A2, A4B, A4A, Q3 and A3 causes the output voltage of A2 to be limited to a maximum of approximately 1.8 volts. The output of A2 drives the master volume control whose wiper is normally connected directly to the power amplifier input. Since the power amplifier sensitivity is approximately 0.7 volts, setting the MASTER VOLUME control at approximately 6dB attenuation will enable the limiter to prevent power amplifier clipping.

Between the MASTER VOLUME control and the power amplifier are the LINE OUT and POWER AMP in jacks, which can be used to insert a signal modification device between the preamplifier and power amplifier sections. It should be noted that any deviation from the unity gain in this device will cause a similar deviation in relationship of the MASTER VOLUME control position and power amplifier clipping or prevention thereof. Line output jack, J3 can also be used to drive slave amplifiers or a studio mixing board or other units. Finally, additional protection against excessive voltage inputs at input and output jacks are provided by diodes CR1, CR2, CR3, and CR4. These diodes serve to limit the maximum voltage excursion at the input and output stages to between the +/- supply rails.

Transistor Q3, commonly known as a Vbe multiplier, maintains a constant but temperature dependent voltage between the bases of Q5 and Q8. Q3 is bolted to the heat sink coupler plate, and due to the heating effect of the output transistor the Vbe of Q3 decreases and, therefore decreases the operating (class AB) bias current in the output transistors. This current is adjusted by means of R9, the bias adjustment potentiometer.

POWER SUPPLY AND POWER AMPLIFIER

This module consists of a simple, rugged power amplifier with self-contained power supply, capable of delivering 80 watts to a 4 ohm resistive load. The center tapped power transformer secondary is rectified by a bridge formed by CR3, CR4, CR5 and

CR6 and filtered by capacitors C10 and C11 to provide a +/-36 volt unregulated supply for the power amplifier section. This +/-36 volts is also fed to the signal processor printed circuit board where it is regulated to +/-15 volts.

The incoming signal is first AC coupled by capacitor C1 and then applied to transistor Q1, whose base forms the noninverting input of a differential amplifier formed by transistors Q1 and Q2. Ripple on the +36 volt supply is decoupled via resistor R4 and capacitor C4. Resistor R3 approximates a two milliamp current source to supply the emitters of the differential amplifiers Q1 and Q2. The differential amplifier's output appears across resistor R2 and is applied to the class A, common emitter voltage gain stage transistor Q4. Diodes CR1 and CR2 limit the maximum input voltage to Q4 in order that its maximum output current does not exceed 40 milliamps. Limiting the collector current in Q4 prevents its overheating when the amplifier is driving a short circuit or other excessive load. The collector load of Q4 is formed by resistors R11 and R10. There is an addition of C5, the "bootstrap" capacitor, which maintains a constant voltage across R10, causing R10 to appear as a current source, and increasing the voltage gain of Q4.

Lag frequency compensation capacitors C7 and C8 are used to stabilize the amplifier. Driver transistors Q5 and Q8 have the basic purpose of providing enough current gain for class A transistor, Q4, to drive the output transistors, Q6, Q7, Q9 and Q10. The drivers have approximately 40 milliamps idling current under quiescent conditions. This is determined by the fact that it is necessary to develop approximately 0.6 volt across resistors R16 and R13 to turn the output transistors on. Transistors Q6, Q7, Q9, and Q10 form the quasicomplementary output stage. Emitter resistors, R14, R15, R17 and R18 provide current sharing in the output transistor pairs as well as increasing the bias stability. The amplifier's voltage gain is determined by resistors R6 and R5, and is set at approximately 28dB. Capacitor C3 enables the DC voltage feedback to approach infinity and, therefore maintain a low value of quiescent output offset voltage.

BIAS ADJUSTMENT

If transistor Q3, Q5, Q8, Q9 or Q10 have been replaced, it is necessary to readjust bias current. Maintain AC line voltage at 120 volts and proceed as follows:

Method No. 1

1. Turn unit off and disconnect speaker wire(s). Insert AC ammeter (0-1A or 0-2A) in series with power line cord.

2. Turn BIAS potentiometer R9 fully counter-clockwise. Turn unit on and measure AC line current with no inputs connected.

3. Adjust BIAS potentiometer R9 until line current increases 60mA from reading in step 2.

Method No. 2

1. Turn unit off and disconnect speaker wire(s). Connect DC millivoltmeter across resistor R14, R15, R17 or R18.

2. Turn unit on and adjust BIAS potentiometer R9 for reading of approximately 10mV.

3. Check that voltage across other resistors is between 5mV and 20mV. Readjust if necessary.

Method No. 3

1. Turn unit off and disconnect speaker wire(s). Remove B+ fuse F2 or F3 and connect DC ammeter (0-1A or 0-2A) across fuse terminals.

2. Turn unit on and adjust BIAS potentiometer R9 for ammeter reading of 150mA.

3. Turn unit off and replace fuse.

DISASSEMBLY

1. Rear Panel Removal

a. Remove screws from rear panel and separate panel from the cabinet.

2. Chassis Removal

a. Remove 6 knobs from the front panel and the nuts and washers attaching controls and jacks to the front panel. (Controls and jacks are mounted on the printed circuit board and extend through the front panel.)

b. Disconnect connector plugs at printed circuit boards.

c. Disconnect power cord.

d. Remove the four nuts from the bottom of the chassis and separate chassis from cabinet with Power Supply printed circuit board and the Transformer attached.

3. Printed Circuit Board Removal

a. Remove Power Supply printed circuit board from the interior of the chassis assembly.

b. Separate the Signal Processor printed circuit board from its guides and remove from cabinet.

4. Reverb Unit

a. Mark locations of the black and red cables at the reverb unit and remove cables.

b. Remove screws attaching reverb unit to cabinet and remove unit.

5. Speaker Removal

a. Disconnect speaker cable.

b. Remove nuts from around outer speaker circumference and carefully withdraw speaker.

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WAALHAVEN ● ZUIDZIJDE 48, 3088 H.J., ROTTERDAM ● NETHERLANDS

**L6 AMPLIFIER CIRCUIT DESCRIPTION,
BIAS ADJUSTMENT AND DISASSEMBLY INSTRUCTIONS
MODEL 331A, BX**

993-044116-001

L6 SIGNAL PROCESSOR PRINTED CIRCUIT BOARD ASSEMBLY
REPLACEMENT PARTS LIST

A = DOMESTIC MODEL, X = EXPORT MODEL, BLANK = BOTH MODELS

REF DESIG	PART NUMBER	CODE	DESCRIPTION	QTY
	980-042994-001	A	Printed Circuit Board Assembly	
	980-042994-002	X	Printed Circuit Board Assembly	
A1,A4	991-041146-001		Integrated Circuit, Dual Operational Amplifier 4558	2
A2	991-042793-001		Integrated Circuit, FET In Operational Amplifier 351	1
A3	991-041089-003		Integrated Circuit, Operational Amplifier Custom 3080	1
IC1	991-041086-001		Integrated Circuit, 4007AE	1
C1,C6	946-041978-002		Capacitor, Polyester, 0.001uf	2
C2,C20	947-042020-101		Capacitor, Disc, 100Pf	2
C3,C8,C12	945-040209-018		Capacitor, Electrolytic, 33uf, 16V	3
C4,C11,C18	945-043582-001		Capacitor, Electrolytic, N.P., 10uf, 16V	3
C5	947-042020-680		Capacitor, Disc, 68Pf	1
C7	946-041978-473		Capacitor, Polyester, 0.047uf	1
C9	946-041978-272		Capacitor, Polyester, 0.0027uf	1
C10	946-041978-103		Capacitor, Polyester, 0.01uf	1
C13,C17	945-040209-039		Capacitor, Electrolytic, 4.7uf, 25V	2
C14,C19	946-041978-104		Capacitor, Polyester, 0.1uf	2
C15,C16	946-040229-153		Capacitor, Polyester, 0.015uf	2
C21	945-040209-015		Capacitor, Electrolytic, 10uf, 16V	1
C22,C23	945-040209-009		Capacitor, Electrolytic, 100uf, 25V	2
C24	946-041978-105		Capacitor, Polyester, 1uf	1
C25	945-040209-017		Capacitor, Electrolytic, 47uf, 16V	1
*CR1,*CR2, CR6,CR7,CR10, CR11,CR12	919-042336-001		Diode, Signal, 1N4938	7
*CR3,*CR4	919-042019-001		Diode, Rectifier, 1N4004	2
CR5	919-041278-003		Diode, Zener, 4.7V, 1N5230B.	1
*CR8,*CR9	919-041349-002		Diode, Zener, 15V, 5%, 1N5245B	2
J1,J2	910-041306-009		Jack, Phone, Double Closed, Switchcraft 114B	2
J3	910-041306-001		Jack, Phone, Open Circuit, Switchcraft 111	1
J4	910-041306-002		Jack, Phone, Single Closed, Switchcraft 112A	1
L1,L2	939-041850-001		LED, Red, Opcoa, LSM-6L	2
Q1	991-042659-001		Transistor, FET, PF5102	1
Q2	991-041064-001		Transistor, FET, 2N4303	1
Q3	991-041052-001		Transistor, PNP, 2N3906	1
Q4	991-041050-007		Transistor, PNP, Power, TIP30, Lead Form	1
Q5	991-041049-005		Transistor, NPN, Power, TIP29, Lead Form	1
Q6	991-041053-001		Transistor, NPN, Darlington, D16P1	1
Q7	991-041051-001		Transistor, NPN, 2N3904	1
R1,R2,R3, R15,R53	852-312473-001		Resistor, 47K Ohm, ± 5%, 1/4W	5
R4,R11,R36	852-312475-001		Resistor, 4.7 Megohm, ± 5%, 1/4W	3

NOTE: * Indicates components are elevated on printed circuit board assembly 980-042994-002 export models.

L6 SIGNAL PROCESSOR PRINTED CIRCUIT BOARD ASSEMBLY
REPLACEMENT PARTS LIST (Continued)

A = DOMESTIC MODEL, X = EXPORT MODEL, BLANK = BOTH MODELS

REF DESIG	PART NUMBER	CODE	DESCRIPTION	QTY
R5,R50	852-312102-001		Resistor, 1K Ohm, ± 5%, 1/4W	2
R6,R35,R46, R56	852-312333-001		Resistor, 33K Ohm, ± 5%, 1/4W	4
R7,R12	852-312472-001		Resistor, 4.7K Ohm, ± 5%, 1/4W	2
R8,R38	852-312823-001		Resistor, 82K Ohm, ± 5%, 1/4W	2
R9,R10,R63	852-312155-001		Resistor, 1.5 Megohm, ± 5%, 1/4W	3
R13,R16	925-041426-007		Resistor, 100K Ohm, Linear, Rotary Control	2
R14,R21,R49	852-312223-001		Resistor, 22K Ohm, ± 5%, 1/4W	3
R17,R22,R44, R45,*R58,*R59	852-312103-001		Resistor, 10K Ohm, ± 5%, 1/4W	6
R18,R62	852-512681-001		Resistor, 680 Ohm, ± 5%, 1/2W	2
R19,R48	852-312106-001		Resistor, 10 Megohm, ± 5%, 1/4W	2
R20	923-044117-001		Resistor, Selected, ± 5%, 1/4W.	1
R23	925-041426-003		Resistor, 25K Ohm, Linear, Rotary Control	1
R24,R25, R39,R61	852-312104-001		Resistor, 100K Ohm, ± 5%, 1/4W	4
R26	852-312623-001		Resistor, 62K Ohm, ± 5%, 1/4W	1
R27 thru R30	852-312183-001		Resistor, 18K Ohm, ± 5%, 1/4W	4
R31,R33	852-312512-001		Resistor, 5.1K Ohm, ± 5%, 1/4W	2
R32	925-041427-001		Resistor, 100K-100K Ohm,15% Log CCW, Rotary Control, Dual	1
R34	925-041426-004		Resistor, 50K Ohm, 30%,Log CW, Rotary Control	1
R37	852-312122-001		Resistor, 1.2K Ohm, ± 5%, 1/4W	1
R40,*R64	852-312101-001		Resistor, 100 Ohm, ± 5%, 1/4W	2
R41	925-041426-001		Resistor, 2.5K Ohm, 30% Log, CW, Rotary Control	1
R42	853-424991-031		Resistor, 4.99K Ohm, M.F., ± 1%, 1/4W	1
R43,R54,R55	853-421002-031		Resistor, 10K Ohm, M.F., ± 1%, 1/4W	3
R47	852-312821-001		Resistor, 820 Ohm, ± 5%, 1/4W	1
R51,R52	852-312221-001		Resistor, 220 Ohm, ± 5%, 1/4W	2
*R57,*R60	924-041258-003		Resistor, 39 Ohm, ± 5%, 2W, F.P.	2
SW1	960-041257-001		Switch, Slide, DPDT, UID	1
	816-040039-006		Screw, Self Tapping, No. 6B x 3/8 in.	2
	902-042525-001		Nut, Speed, Type W, No. 6.	2
	911-042029-001		Pin, Terminal	5
	980-042993-001		Printed Circuit Board	1
SW2	960-041311-002		Switch, Rocker, LIMITER, IN/OUT	1

L6 POWER SUPPLY AND POWER AMPLIFIER PRINTED CIRCUIT BOARD ASSEMBLY
REPLACEMENT PARTS LIST

A = DOMESTIC MODEL, X = EXPORT MODEL, BLANK = BOTH MODELS

REF DESIG	PART NUMBER	CODE	DESCRIPTION	QTY
	996-042991-001	A	Printed Circuit Board Assembly	
	996-042991-002	X	Printed Circuit Board Assembly	
C1	946-041978-474		Capacitor, Polyester, 0.47uf	1
C2	946-041978-224		Capacitor, Polyester, 0.22uf	1
C3	945-040209-041		Capacitor, Aluminum Electrolytic, 47uf, 10V	1
C4	945-040209-036		Capacitor, Aluminum Electrolytic, 10uf, 35V	1
C5	945-040209-017		Capacitor, Aluminum Electrolytic, 47uf, 16V	1
C6,C9	945-041978-104		Capacitor, Polyester, 0.1uf	2
C7	947-042020-471		Capacitor, Disc, 470Pf	1
C8	947-042020-221		Capacitor, Disc, 220Pf	1
C10,C11	945-042760-002		Capacitor, Aluminum Electrolytic, 4700uf, 40V.	2
*CR1,*CR2	919-041075-001		Diode, 1N4148, Alternate 1N914	2
*CR3,*CR4, *CR5,*CR6	919-041157-001		Diode, Rectifier, MR502, Alternate GE A15B	4
F1	939-042917-003		Fuse, 5 x 20mm, 3 Amp. Slo Blo	1
F2,F3	939-041620-009		Fuse, 5 x 20mm, 4 Amp. Slo Blo	2
F1,	939-044094-001	X	Fuse, 5 x 20mm, T 1.6 Amp. Time Lag	1
F2,F3, F4,F5	939-044094-002	X	Fuse, 5 x 20mm, T 3.15 Amp. Time Lag	4
P1	910-041716-003		Header, 3 Pin, Commercial Mate-N-Lok	1
P2	910-042533-004		Header, 4 Pin, 0.156 Centers	1
Q1,Q2	991-042758-001		Transistor, NPN, MPS 8598	2
Q3	991-041271-002		Transistor, NPN, With Clip, 2N3403, Lead Form	1
Q4,Q8	991-041049-006		Transistor, NPN Power, TIP29B, Lead Form	2
Q5	991-041050-006		Transistor, NPN Power, TIP30B, Lead Form	1
Q6,Q7,Q9, Q10	992-042759-001		Transistor, NPN Power, TO3, Special, 2N6254	4
R1,R6	852-312333-001		Resistor, 33K Ohm, ± 5%, 1/4W	2
R2	852-312821-001		Resistor, 820 Ohm, ± 5%, 1/4W	1
R3	852-312153-001		Resistor, 15K Ohm, ± 5%, 1/4W	1
R4	852-312302-001		Resistor, 3K Ohm, ± 5%, 1/4W	1
R5	852-312132-001		Resistor, 1.3K Ohm, ± 5%, 1/4W	1
*R7	852-312471-001		Resistor, 470 Ohm, ± 5%, 1/4W	1
R8	852-312122-001		Resistor, 1.2K Ohm, ± 5%, 1/4W	1
R9	925-040275-011		Resistor, 470 Ohm, Trim Pot	1
R10	852-312102-001		Resistor, 1K Ohm, ± 5%, 1/4W	1
R11	852-512202-001		Resistor, 2K Ohm, ± 5%, 1/2W	1
*R12,*R13, *R16	852-512150-001		Resistor, 15 Ohm, ± 5%, 1/2W	3
*R14,*R15, *R17,*R18	924-041258-008		Resistor, 0.22 Ohm, ± 5%, 2W F.P.	4
*R19	852-512100-001		Resistor, 10 Ohm, ± 5%, 1/2W	1
	806-045132-005		Screw, 6-32 x 5/16 in.	3
	811-040036-010		Screw, No. 6 x 5/8 in., Pan Hd., Self Tapping, Type A	8
	902-040199-012		Nut, 10-32, Self Clinching	8
	902-040502-002		Nut, Speed, 6-32	3
	903-042674-001		Screw, 4-40 x 1/4 in., Taptite	9
	904-040495-015		Washer, Lock, No. 4	5
	904-042729-001		Washer, Insulated Shoulder.	3
	905-042027-004		Rivet, 1/8 in., Dia., x 3/16 in., Tubular.	2
	906-041256-001		Socket, Transistor TO3	4
	906-041345-001		Clip,Fuse, Printed Circuit Board Mounted. 5 x 20mm	4
	906-043605-001	X	Clip, Fuse, Printed Circuit Board Mounted, 5 x 20mm.	8
	908-041332-001		Insulator, Mica, TO3	4
	908-042730-001		Insulator, Mica Tip Trans.	3
	967-042745-001		Bracket, Angle	2
	967-043597-001		Bracket, Power Amplifier	3
	968-043581-001		Coupler, Heat Sink	1
	973-041409-017		Spacer, No. 6 x 0.187 in.	8
	980-042990-001		Printed Circuit Board	1

NOTE: * Indicates selected components are elevated above printed circuit board assembly 996-042991-002 export models.

L6 FINAL ASSEMBLY
SELECTED PARTS LIST
CODE A = DOMESTIC MODEL, X = EXPORT MODEL, BLANK = BOTH MODELS

INDEX NO. OR REF DESIG	PART NUMBER	CODE	DESCRIPTION	QTY
LS1	985-044111-001		Speaker, 15 inch, 4 ohm, Wide Range	1
	806-065039-020		Screw, Machine, 10-32 x 1-1/4 in.	8
	904-041507-017		Washer, Lock, No. 10	16
SW1	960-042753-001	A	Switch, Power, SPST	1
S1	906-051515-001	A	Receptacle, AC	1
SW1	960-042800-001	X	Switch, Power, DPDT	1
S1	910-042913-001	X	Receptacle, CEE 22	1
F1	939-041620-008	A	Fuse, 3 Amp., Slo Blo, 1/4 x 1-1/4 in.	1
F1	939-044094-001	X	Fuse, T 1.6 Amp., 5 x 20mm	1
T1	954-043580-001	A	Transformer, Power, 115V	1
T1	954-044096-001	X	Transformer, Power, 115V/230V	1
	957-041367-002	A	Power Cord, SJT 18-3	1
	957-043500-001	X	Power Cord	1
	994-041611-001		Cable Assembly, Speaker	1
	976-044113-001		Strain Relief, Heyco SR-4P-4	1
J1	910-041452-003		Jack, Single Circuit	1
	904-040601-010		Washer, Shoulder	2
	904-040495-021		Washer, Lock, 3/8 in. ID	1
	902-040504-007		Nut, 3/8-32 NEF	1
	961-040665-002		Strap, Decorative	2
	806-065532-056		Screw, Machine, 10-32 x 3-1/2 in., Oval Hd.	4
	902-040199-012		Nut, Clinch, 10-32	4
	997-041305-001		Knob	6
	978-042985-001		Cabinet Assembly consisting of:	
	806-065532-016		Screw, Machine, 10-32 x 1 in., Phil. Oval Hd., Cad. Plate	2
	811-050532-012		Screw, Self Tapping, No. 8 x 3/4 in., Oval Hd., Cad. Plate	14
	902-040499-003		Nut, Tee, 10-32	10
	916-042329-001		Bumper	4
	930-043515-001		Handle, Strap	1
	930-043514-001		Handle, End Cap	2
	961-040681-003		Corner, 2 arm, 3/4 in.	2
	961-042328-002		Glide	4
	961-041458-002		Corner, 3 arm	2
	978-042985-005		Grill Assembly	1

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MOOG MUSIC INC., DIVISION OF NORLIN INDUSTRIES

2500 WALDEN AVE. ● BUFFALO, NEW YORK 14225 ● UNITED STATES
51 NANTUCKET BLVD. ● SCARBOROUGH, ONT. MIP 2N6 ● CANADA
WAALHAVEN ● ZUIDZIJDE 48, 3088 H.J., ROTTERDAM ● NETHERLANDS

L6 AMPLIFIER REPLACEMENT PARTS LIST

MODEL 331A, BX **993-044116-001**